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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,152	12/29/2000	Hidefumi Ohsawa	35.C15035	6535
5514	7590	08/16/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			DASTOURI, MEHRDAD	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	

2623

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/750,152	OHSAWA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Mehrdad Dastouri	2623	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 24, 2004 has been entered.

### ***Response to Amendment***

2. Applicants' amendment filed May 26, 2004, has been entered and made of record.
3. Objection to Claim 12 has been withdrawn in view of Applicants' amendment.
4. Applicants' arguments regarding Claims 1-12 have been fully considered but they are not persuasive. Applicants argue in essence that prior art of record (Shackleton et al) do not disclose the feature of generating initial contour information for extracting an object existing in image data, *in accordance with an output of a detection unit/step (detecting a change between successive image data) and a color of the image data.*

The Examiner disagrees and indicates that Shackleton et al clearly disclose the feature of generating initial and successive contours by *detecting a change between successive image data* (Column 13, Lines 26-49. A difference picture is created by subtracting each object from its predecessor using video processor 5 and framestore

4.). Applicants' further argument regarding extracting an object in accordance with a color of the image data is moot with regards to the new grounds of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7, 8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shackleton et al (U.S. 5,719,951) in view of Covell et al (U.S. 6,188,776).

Regarding Claim 1, Shackleton et al disclose an image processing apparatus, comprising:

an input unit that inputs successive image data (Figure 2; Column 13, Lines 24-34);

a detection unit that detects a change between the successive image data (Column 11, Lines 34-67, Column 12, Lines 1-9; Figures 2 and 3; Column 13, Lines 34-67, Column 14, Lines 1-3);

a generation unit that generates initial contour information for extracting an object existing in the image data in accordance with an output of said detection unit (Figures 2 and 3; Column 13, Lines 40-49); and

an extraction unit that extracts object image data corresponding to the object on the basis of the initial contour information generated by said generation unit (Abstract; Figures 2 and 3; Column 13, Lines 50-67, Column 14, Lines 1-18).

Shackleton et al further disclose extracting the object by generating an N-dimensional feature vector based on the extracted attributes of the image (Column 2, Lines 35-52). Shackleton et al do not explicitly disclose extracting an object in accordance with a color of the image data.

Covell et al, in the same field of endeavor of recognizing the object in video images (Face Recognition), disclose a feature-based object recognition utilizing color, saturation or hue of an image as one of the attributes of the feature vector generated for extracting process (Column 7, Lines 19-40).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Shackleton et al's invention in accordance with the teachings of Covell et al to extract an object in accordance with a color of the image data because it will provide more accurate image segmentation and will improve the accuracy and reliability of the object extraction and recognition.

Regarding Claim 2, Shackleton et al further disclose an image processing apparatus according to Claim 1, further comprising a coding unit that encodes the object image data extracted by said extraction unit (Column 1, Lines 33-39; Column 2, Lines 47-52).

Regarding Claim 3, Shackleton et al further disclose an image processing apparatus according to Claim 2, further comprising a transmission unit that transmits the image data encoded by said coding unit (Column 2, Lines 47-52).

Regarding claim 7, Shackleton et al disclose area-division unit that performs area division based on motion of image data (Column 4, Lines 45-65, Snake technique). Shackleton et al do not explicitly disclose area-division unit that performs area division based on color.

Covell et al disclose a video image analysis system comprising a first area-division unit that performs area division based on color (Column 3, Lines 4-63), and a second area-division unit that performs area division based on motion of image data (Column 2, Lines 38-59), and generates the initial contour information in accordance with outputs from said first and second area-division units (Figures 5-12; Column 21, Lines 15-54; Column 22, Lines 50-67, Column 23, Lines 1-38).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Shackleton al invention according to the teachings of Covell et al to implement further limitations of Claim 7 because it will increase the accuracy of the system and will provide enhanced contour generation and object extraction.

Regarding Claim 8, Shackleton et al further disclose an image processing apparatus according to Claim 7, further comprising a display unit that displays image data input by said input unit, wherein said display unit can display an extraction result of

said extraction unit so as to visually check the extraction result (Column 14, Lines 18-25).

Regarding Claim 10, a recording unit that records image data encoded by said coding unit on a recording medium is inherently incorporated in all coding systems.

With regards to Claims 11 and 12, arguments analogous to those presented for Claim 1 are applicable to Claims 11 and 12.

5. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shackleton et al (U.S. 5,719,951) further in view of Covell et al (U.S. 6,188,776) and Drummond et al (Real-Time tracking of Complex Structures with On-Line Camera Calibration).

Regarding Claim 4, Shackleton et al further disclose an image processing apparatus according to claim 1, wherein the image data input by said input unit include data picked up by a video camera (Figure 2; Column 13, Lines 24-49).

Shackleton et al and Covell et al do not specifically disclose the input unit inputs parameter data concerning a camera parameter of the video camera, and said detection unit detects a change between the successive image data based on the parameter data.

Drummond et al disclose a three-dimensional model-based tracking system comprising an input unit that inputs parameter data concerning a camera parameter of the video camera, and the detection unit that detects a change between the successive image data based on the parameter data (Abstract; Section 1, Introduction; Section 4, On-Line Camera Calibration).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Shackleton et al and Covell et al combination according to the teachings of Drummond et al to input parameter data concerning a camera parameter of the video camera, and having the detection unit that detects a change between the successive image data based on the parameter data because it will increase the accuracy of the system and will provide enhanced contour generation and object extraction.

Regarding Claim 5, Drmmond et al further disclose an image processing apparatus according to Claim 4, wherein the detection unit performs different detection processing in accordance with the parameter data (Abstract; Section 1, Introduction; Section 4, On-Line Camera Calibration).

Regarding Claim 6, Drmmond et al further disclose an image processing apparatus according to claim 4, wherein said input unit includes the video camera (Section 1, Introduction).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shackleton et al (U.S. 5,719,951) further in view of Covell et al (U.S. 6,188,776) and Vetro et al (6,266,443).

Shackleton et al and Covell et al do not explicitly disclose the coding technique utilized for coding the video image.

Vetro et al disclose an object boundary detection utilizing video coding standard MPEG-4 (ISO/IEC 14496) (Column 1, Lines 16-29).



It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Shackleton al invention according to the teachings of Vetro et al to utilize video coding standard MPEG-4 (ISO/IEC 14496) because it is a well known methodology routinely implemented in video coding systems.

***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mehrdad Dastouri  
Primary Examiner  
Group Art Unit 2623  
August 10, 2004

MEHRDAD DASTOURI  
PRIMARY EXAMINER

*Mehrdad Dastouri*